

# Distributional records, natural history notes, and conservation of some poorly known birds from southwestern Ecuador and northwestern Peru

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(Continued from p. 119)

## CHAPMAN'S ANTSHRIKE *Thamnophilus zarumae*

T

This distinctive antshrike was found at six sites in Loja Province, Ecuador, and at Ayabaca in Piura Department, Peru, from 800 to 2625 m (the highest study-site). The Utuana (2500 m) and Ayabaca (2625 m) records were higher than the previously known upper altitudinal limit of 2200 m (R. Ridgely). *T. zarumae* was uncommon to fairly common in Semi-evergreen Lower Montane and Humid Montane Cloud Forest and in secondary scrub, being most common above 1500 m (rare in *Ceiba*-dominated Deciduous Forest below 1000 m at Tambo Negro). Individuals or pairs foraged at mid-upper storey level, and fed on insects and fruits, including the berries of a tree in the family Meliaceae. Males called with a series of descending notes; females and males also gave a soft contact call, *piuur* or *ow* (all three vocalizations were tape-recorded).

In accordance with Ridgely & Greenfield (in prep.), *T. zarumae* is treated here as a species distinct from *T. doliatus*, from which it is geographically isolated and differs in plumage (males having barring only extending to the mid-belly, and solid black crests) and vocalizations. Although previously considered to be threatened (dropped from the Red Data Book candidate list after initial consideration; N. Krabbe), our observations and those of other workers (e.g. Bloch *et al.* 1991, R. Ridgely) have shown this species is not in danger, as it occurs commonly in degraded areas.

## GREY-HEADED ANTBIRD *Myrmeciza griseiceps*

T, endangered

We found this skulking and enigmatic antbird on four occasions. On 22 September 1989 several were heard and one female seen in bamboo below Humid Montane Cloud Forest at Cerro Chacras above Ayabaca, Piura Department, Peru. The call was short, harsh, nasal *ursz*. On 5 February 1991 at Tambo Negro, Loja Province, Ecuador, a female and an unsexed individual foraged through thick undergrowth with Black-capped Sparrows *Arremon abeillei* beneath *Ceiba*-dominated Deciduous Forest. On 6 February 1991 at Utuana (also Loja Province), a male in bamboo below Humid Montane Cloud Forest uttered a distinctive short, trilled *tiirrrrr* (Fig. 3a). Immediately after the bird uttered one trill, a low *trrr-trrr* and an *uzzzz* were heard from within the same bamboo patch; possibly a second bird replying. The trill,

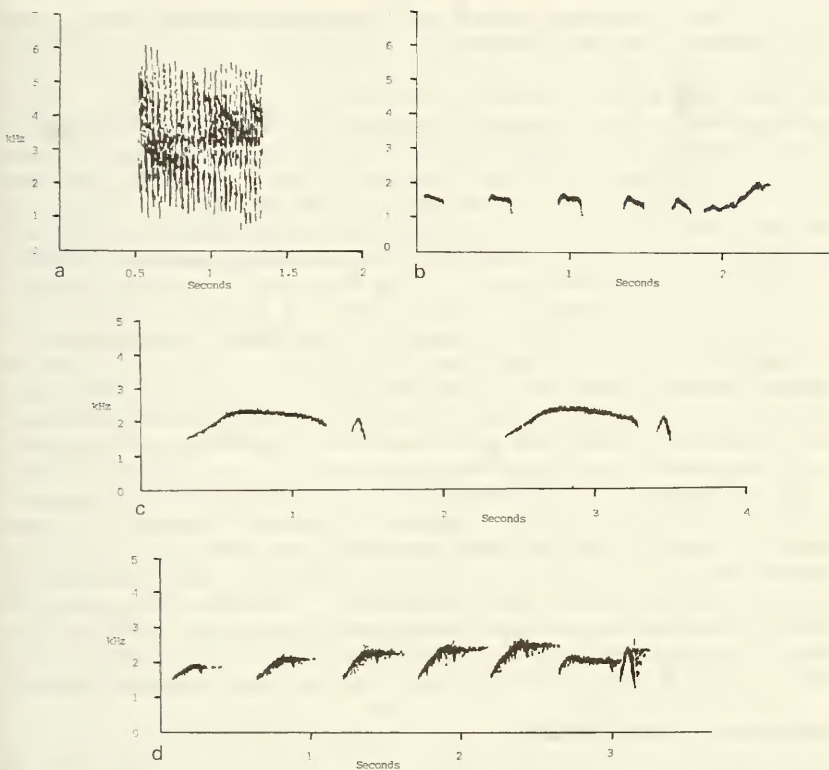


Figure 3. Calls of (a) *Myrmeciza griseiceps*, (b) *Grallaria watkinsi*, (c) and (d) *Attila torridus*; a, c and d from recordings made by F. Lambert.

which has not been previously described, probably represents the territorial song of this poorly-known species.

Many bird species in southwestern Ecuador breed during the rainy season (Appendix B, Marchant 1958), and these are the first records of this species during that period. Assuming the *M. griseiceps* also breeds at this time, it is thus not surprising that what we consider to be its territorial song has not hitherto been heard. The generic position of the species is unclear (Ridgely & Greenfield in prep.): it may prove not to be a *Myrmeciza*. The presumed song apparently does not match any known antbird genus, emphasizing the need for a taxonomic revision.

On 15 and 16 February 1991 at least five further males gave the presumed territorial song from thick bamboo and non-bamboo undergrowth above Vicentino in Loja Province. When not vocalizing *M. griseiceps* can be almost impossible to detect in its impenetrable habitat. It is confined to a very small area of Ecuador's Loja and El Oro Provinces and adjacent Tumbes Department, Peru, and we believe it to

be one of the most threatened of the Tumbesian endemics, being at risk from deforestation, and understorey clearance and trampling.

**WATKINS' ANTPITTA** *Grallaria watkinsi*

T

Recorded at five sites in Loja Province, Ecuador, from 500 to 2000 m, on the forest floor and on the ground beneath scrub. It was most easily located by the territorial call, a loud, frequently given, 6–9 note whistle (Fig. 3b). This call is quite distinct from the three-note whistle of the Chestnut-crowned Antpitta *G. ruficapilla*, with which *G. watkinsi* was considered conspecific by Meyer de Schauensee (1970).

Ridgely & Greenfield (in prep.) treat the two as separate species, and they are usually separated by altitude, but from January to March 1991 at Quebrada Yaguana near Sozoranga, *G. watkinsi* overlapped with *G. ruficapilla* in the altitudinal range 1600–2000 m in the same habitat; below 1600 m only the former species occurred and above 2000 m only the latter. *G. watkinsi* was extremely difficult to observe, being seen only a handful of times and only once above the forest floor, apparently preferring more viny, humid undergrowth.

*G. watkinsi* was formally considered threatened by deforestation and understorey clearance, being especially vulnerable because of its tiny range (dropped from the Red Data Book candidate list after initial consideration; N. Krabbe). Additionally it has been found in degraded areas by several workers in southwestern Ecuador (this study, R. Ridgely) and is thus no longer considered to be at risk. It has recently been found in a new area: the coastal hills of western Ecuador (Krabbe 1992, Parker & Carr 1992), which extends its known range northward.

**BLACK-CRESTED TIT-TYRANT** *Anairetes nigrocristatus*

We recorded this distinctive species for the first time in Ecuador at Utuana, extreme southern Loja Province, on 14 September 1989, and it was subsequently found there on 6 February 1991. In September 1989 a male and a female foraged together in low shrubs in a clearing adjacent to cloud forest. In February 1991 a male and female were again in the same area, and two sightings of single males were made nearby. On all four occasions the conspicuous black and white plumage and broadly white-tipped tail of the males were seen. These records extend the known northern limit of *A. nigrocristatus* into extreme southern Ecuador from Piura Department, Peru. Fjeldså & Krabbe (1990) treated *A. nigrocristatus* as a species distinct from *A. reguloides*, of which it was previously considered a subspecies (Meyer de Schauensee 1970).

**RUFOUS-CROWNED TODY-TYRANT** *Poecilatriccus ruficeps*

On 23 September 1989 an individual foraged in low, humid secondary growth adjacent to cloud forest at Utuana, Loja Province, Ecuador. This is only the second report of *P. ruficeps* on the Andean west slope in Ecuador south of Chimborazo Province (the two records collectively extend the known west-slope range south by about 250 km). More significantly, the Utuana individual did not resemble the northwest Ecuadorian subspecies *P. r. rufigenis*, since it possessed a



strongly rufous head and thick black border to the crown. In these respects it was very close to the nominate *P. r. ruficeps* of southeastern Ecuador. Interestingly, a MECN specimen of *P. r. ruficeps*, collected by M. Olalla in 1968, is labelled "Cordillera de Tinajillas, Loja Province" (Krabbe 1991). That and the present record indicate that the form occurring in southwestern Ecuador may be *P. r. ruficeps* of eastern Ecuador rather than *P. r. rufigenis* of the northwest, a pattern mirrored by the Chestnut-breasted Coronet *Boissonneaua matthewsii* (R. Ridgely). However, subspecific determinations in this species are difficult and some further revision may be necessary (R. Ridgely, T. Schulenberg).

**GREY-BREASTED FLYCATCHER** *Lathrotriccus griseipectus* T, vulnerable/rare

Although not detected during our 1989 survey, several were found in *Ceiba*-dominated Deciduous Forest at Tambo Negro (Loja Province) from January to March 1991, and one individual was located in Semi-evergreen Lower Montane Cloud Forest at 1750 m at Quebrada Suquinda (Sozoranga, also Loja Province) on 1 February 1991, extending the known upper altitudinal limit by 350 m. *L. griseipectus* was restricted to forest understorey, where individuals performed short aerial sallies. One bird chased another through the understorey on 4 February, otherwise they occurred singly. Birds uttered a weak trilled call, *pyur-peer*, and a longer three-note *peeee-peee-peee* (tape-recorded).

Since this species was not found in August and September 1989 at Tambo Negro (the dry season), it may make seasonal movements. Such movements are suggested by records of *L. griseipectus* (considered a Tumbesian endemic by Cracraft 1985 and Stattersfield *et al.* in prep.) as far north as Mindo, Pichincha Province (0°02'S, 78°48'W, BMNH specimen), and Río Verde, Esmeraldas Province (1°05'S, 79°30'W, Norton *et al.* 1972), both in the northwest of Ecuador; there are also a small number of records from the upper Marañón valley of northeastern Peru (specimens in FMNH and LSUMZ; Collar *et al.* 1992); this phenomenon is discussed further by Clarke (in press). *L. griseipectus* is threatened by widespread habitat clearance (Collar *et al.* 1992, Best in press). Previously considered a member of the genus *Empidonax*, Ridgely & Greenfield (in prep.) place this species in the genus *Lathrotriccus* which was originally erected for Euler's Flycatcher *L. euleri* (Lanyon & Lanyon 1986).

**OCHRACEOUS ATILA** *Attila torridus* T, endangered

This scarce attila was found at four Ecuadorian sites in February 1991, three in western Loja Province and one in southern El Oro, in semi-evergreen and evergreen forest from 900–1700 m. The 1700 m record extends the known upper altitudinal limit of the species by 375 m. Two birds sang in each of two forested ravines at Tierra Colorada (Humid Lower Montane Cloud Forest) from 7 to 20 February, and photographs were obtained. One was seen in the mid- and understorey making short aerial sallies (once to the ground), and moving quickly from branch to branch, pumping its tail constantly.

One singing bird was accompanied by a second individual in a remnant forest patch at Quebrada Las Vegas (Humid Lower Montane Cloud Forest) NE of Alamor on 18–19 February. One silent individual perched in the lower mid-storey on the edge of a forest patch (Very Humid Premontane Cloud Forest) at Buenaventura west of Piñas; it frequently changed perch, scanning intently from each. One bird sang from humid forest at 1700 m, c. 3 km W of Celica at 4°05'S, 79°58'W, in early February.

Three different vocalizations were heard and tape-recorded: a drawn-out whistle, rising then falling in pitch (Fig. 3c); the presumed true song: a series of 5–7 short whistles ascending in pitch followed by a deeper, two note finale *too-teeoo*, the second note rising then falling (Fig. 3d); and a rapid *woop-wee-oo-oo-ee*, the first note upward inflected, the second highest in pitch, and the final note higher than the third and fourth. *A. torridus* is almost confined to remnant humid forest patches in the Tumbesian region (there is one record from SW Colombia: Blake 1959) and appears to have been overlooked by Collar & Andrew (1988), probably through lack of data. Recent studies have shown the species to be apparently forest reliant, and it has been listed in the Red Data Book of the Americas (Collar *et al.* 1992).

#### **GOLDEN-NAPED TANAGER** *Tangara rufivertex*

At least two birds were present at each of two sites in Ecuador, Tierra Colorada and Alamor (both Loja Province), and a few sightings were made at a third, Buenaventura (El Oro Province), during February and March 1991. These records represent a small southward range extension on the Andean west slope as the species had not previously been reported from Loja Province (Ridgely & Tudor 1989, Ridgely & Greenfield in prep.); additionally there are no other recent records from El Oro Province (R. Ridgely).

#### **DUSKY BUSH-TANAGER** *Chlorospingus semifuscus*

Uncommon at Buenaventura (El Oro Province, Ecuador) in February and March 1991 in the understorey of Very Humid Premontane Cloud Forest, especially where *Weinmannia*, *Clusia* and *Chusquea* occurred. This species was not recorded at Buenaventura by Robbins & Ridgely (1990) during 75 observer days in the dry season (July–August) over several years, and may be a seasonal visitor to this site (see discussion). This record extends the known range of *C. semifuscus* in Ecuador south by about 300 km from Pichincha Province. Buenaventura is also the most southerly known locality for several other humid forest passerine species (e.g. Pale-vented Thrush *Turdus obsoletus*, Black-chinned Mountain-Tanager *Anisognathus notabilis*), being the southern terminus of the very humid Pacific slope upper-tropical cloud forest of Colombia and Ecuador (Robbins & Ridgely 1990).

#### **BLACK-EARED HEMISPINGUS** *Hemispingus melanotis piurae*

We documented the first Ecuadorian record of this very distinctive race at Utuana (extreme southern Loja Province) on 14 September

1989; it was subsequently found to be fairly common there in that year. The same subspecies was also found in small numbers at Cerro Chacras, above Ayabaca in Piura Department, Peru. The black crown, broad white supercilia and strongly rufous underparts were all clearly seen (and photographed), allowing easy distinction from *H. m. ochraceus* of western Colombia and western Ecuador. Groups of 3–8 individuals foraged through the understorey and in Humid Montane Cloud Forest trees, in single-species flocks and occasionally also with Plushcaps *Catamblyrhynchus diadema* in bamboo. *H. melanotis* was not seen at Utuana in 1991; this is potentially troubling as a considerable amount of the cloud forest and bamboo seen in 1989 had by then been burned, and this species (and others) may have been adversely affected. However, it is also possible that local seasonal movements take place. The form *piurae* may prove to be a distinct species (Ridgely & Tudor 1989) and the above record extends its known range north from Piura Department, Peru, into southern Ecuador.

#### **BLACK-AND-WHITE TANAGER** *Conothraupis speculigera*

This poorly-known tanager was found at several Ecuadorian sites in 1991 from 320 m (the lowest study-site) to 1800 m as follows: a calling male at Uzchurrumi (El Oro Province) on 15 February; at least four calling males at Vicentino on 15 and 16 February (one seen); 10 in acacia scrub at Catachocha on 4 March; a calling male at Panacillo (Sozoranga) on 6 March and 10 March; and four calling males along a 400 m trail at Tambo Negro on 7 March (all Loja Province). At all times the species occurred in scrubland away from forest. Others were seen or heard calling from scrub on numerous roadside stops between the study sites.

The call was a two note *zit-zoo*, with a peculiar icterid-like quality. No *C. speculigera* were seen at Tambo Negro between 26 January and 7 February 1991 (when very little rain had fallen, and the vegetation was almost leafless), but the species was easily located there after 6 March that year (after several weeks of rain). This may indicate that this species moves into the area to breed in the rainy season. Indeed, there is evidence that the species breeds in southwestern Ecuador and migrates over the Andes to northeastern Peru at the end of the wet season (Ridgely & Tudor 1989, L. Kiff). A 1987 WFVZ specimen from Tayntza in Morona-Santiago Province was the first from eastern Ecuador (R. Ridgely).

#### **BLACK-COWLED SALTATOR** *Saltator nigriceps*

T

Found at three sites in Loja Province, Ecuador, from 1550 to 2500 m, occurring alone in the mid- and upper storeys of semi-evergreen and evergreen forest and in scrub away from forest. The species was seen every few days at Utuana and Sozoranga during August and September 1989 and was found at two sites from January to March 1991: Utuana, where a calling bird in an area of low scrub uttered a short *psee-psiu* on 6 February (tape-recorded by F. Lambert); and Sozoranga where four singles were seen, one of which sang. This species was given near-threatened status in Collar & Andrew (1988), but our records



indicate that it readily survives in degraded habitat, as noted elsewhere within its restricted range (e.g. Bloch *et al.* 1991); its near-threatened status has been dropped in Collar *et al.* (1992). *S. nigriceps* is sometimes considered a subspecies of the Golden-billed Saltator *S. aurantirostris* (Fjeldså & Krabbe 1990). We follow Ridgely & Greenfield (in prep.) in treating *S. nigriceps* as a species distinct from *S. aurantirostris*, the closest race of which (*iteratus*) does not seem to approach *nigriceps* in appearance, lacking the buff throat and underparts, pronounced white post-ocular stripe, and white basal half to the tail of that race. Their voices are known to be very dissimilar (R. Ridgely).

### Discussion and conclusions

From a distributional standpoint, the most interesting study site was Utuana in southern Loja Province, Ecuador. In addition to documenting it as the only known Ecuadorian site for *Anairetes nigrocristatus* and *Hemispingus melanotis piurae* of northern Peru, we also established the noteworthy occurrence there of an unidentified race of *Poecilatriccus ruficeps*. A third potential addition to the Ecuadorian avifauna at Utuana is a possible Peruvian Sheartail *Thaumastura cora* observed by P. Coopmans in July 1991. Further investigation of this site at different times of year may reveal additional new distributional information.

There is some evidence that local seasonal bird movements occur in southwestern Ecuador: two sites for which data exist from the wet and dry seasons show seasonal fluctuations in their avifauna. At Buenaventura, west of Piñas, in El Oro Province, Ridgely & Robbins [ANSP] (1990) made intensive surveys during the dry season (concentrated on July and August; 75 observer days) with only 4 observer days in the wet season; there has also been a short February study (2 observer days) by N. Krabbe and F. Lambert (Krabbe 1991). Our work, 38.5 observer days in February–March 1991, thus represents the first significant survey of this site during the rainy season. Clarke (in press) found that there are at least 12 species (excluding austral migrants) which have only been recorded from Buenaventura at one season. This amounts to about 6 percent of the total avifauna recorded from the site. At Tambo Negro in extreme southern Loja Province, a similar proportion were recorded only from one season. Local seasonal movements may occur throughout the Tumbesian region and the topic is discussed further in Clarke (in press).

Prior to our surveys many of the Tumbesian endemics were primarily (or even solely) considered inhabitants of deciduous forest. With the exception of *Synallaxis tithys* each threatened Tumbesian species was found in both deciduous and semi-evergreen or evergreen forests. Evidence is also accumulating to support the theory that Tumbesian species may move between habitats throughout the year. Such information has clearly demonstrated that any regional conservation plan must seek to protect all the forest types of the Tumbesian region rather than just the deciduous types.

TABLE 1

Restricted range species recorded at 14 sites in southwestern Ecuador and 1 in northwestern Peru

Endemic Bird Area	Sites														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Tumbesian	2	7	0	6	14	9	10	16	9	10	2	21	7	26	6
Chocó/Pacific Andes	0	1	0	8	1	0	0	0	0	0	0	0	0	0	0
South Central	0	0	0	0	0	0	0	1	2	0	0	1	2	0	2
Andean forests															

Site numbers correspond to: 1, Río Rircay; 2, Uzhcurrumi; 3, Oña; 4, Buenaventura; 5, Vicentino; 6, Alamor; 7, Tierra Colorada; 8, Catacocha; 9, Celica; 10, El Empalme; 11, El Ceibo-Zapotillo; 12, Sozoranga; 13, Utuana; 14, Tambo Negro; 15, Ayabaca.

Of 340 species recorded, 44 have restricted ranges. These are representatives of three Endemic Bird Areas (Stattersfield *et al.* in prep.). Species from the lowland Tumbesian (33 species) and Chocó/Pacific slope Andes (8 species) EBAs, together with 3 species from the more montane South Central Andean forests EBA. This was reflected in the avifauna of our study sites: Tumbesian endemics dominated lower-altitude sites (e.g. Tambo Negro [site 14], Sozoranga [site 12]) whereas those at higher elevations contained a larger proportion of Andean endemics (Ayabaca [site 15], Utuana [site 13]). The strong altitudinal effects can be seen by comparing the avifauna of Sozoranga and Utuana. Sozoranga was surveyed as low as 1300 m, whereas at Utuana work was confined to forest patches on the 2500 m contour. This 1200 m difference in altitude was enough to reduce the number of Tumbesian endemics found at Utuana by almost 70 percent (from 21 to 7 species) despite the fact that the two sites are only 7 km apart. The more humid forests at higher elevations such as at Utuana are clearly unsuitable for most Tumbesian endemics. Table 1 summarises the records of restricted range species at the 15 study sites.

The 8 Chocó endemics recorded were confined to four humid forest sites below 1800 m, all 9 being found at Buenaventura (the most humid forest surveyed). This is not surprising since the characteristic vegetation of the Chocó region is humid lowland rainforest. The humid forests of southwestern Ecuador mark the southern limit of several Chocó endemics.

We established that in southwestern Ecuador many bird species breed during the rainy season (December–April). In addition to the 8 species mentioned in the text, 50 other species exhibited breeding behaviour from January to March 1991 (Appendix A). For 45 species, our results appear to be the first published breeding data from southwestern Ecuador. In the dry season survey (August and September 1989), breeding behaviour was observed in only two species. Data from the Santa Elena peninsula, situated 200 km to the northwest, points to a similar congruence between breeding activity and seasonal rains (Marchant 1958). In northern study sites (especially



Buenaventura), the breeding season seemed ahead of sites further south. Fully-fledged young of several species were observed at Buenaventura (3°40'S) in early March 1991, whereas at Tambo Negro (4°23'S) most species were nest-building or incubating at that time. This may be due to local climatic variations.

In the study area as a whole, the distributional and ecological data collected on the poorly known species are also of value, especially as their habitats are fast disappearing. Several forest patches shown on 1986 satellite images had been largely removed by 1991. We found 9 of 15 Tumbesian endemics which are considered threatened by Collar *et al.* (1992). Field reconnaissance and analysis of satellite images has revealed that there is only one continuous forest patch with an intact under-storey (Tambo Negro) larger than 10 km<sup>2</sup> in the whole of western Loja and El Oro Provinces (Kessler in press). Dodson & Gentry (1991) showed that in lowland western Ecuador south of Esmeraldas Province, less than 5 percent of the original forest remains. Although the ecology of many Tumbesian endemics is still poorly understood, our information and that in Collar *et al.* (1992) suggest that many species are ill-equipped to withstand any further forest fragmentation.

The two 'protected' areas which could potentially secure the long-term future of 10 of the threatened Tumbesian endemics (but not *Penelope albipennis*, *Pyrrhura orcesi*, *Syndactyla ruficollis*, *Myrmeciza griseiceps* and *Atlapetes pallidiceps*) are the Machalilla National Park in Manabí Province, Ecuador, and the North-West Peru Biosphere Reserve in Tumbes Department, Peru. Unfortunately the park authorities in both areas lack resources and man-power, and there are many problems in the parks, including illegal settlement (Collar *et al.* 1992). Because they remain so vulnerable, outside investment and support, allowing effective protection of these areas, is an immediate priority. But as all the threatened Tumbesian endemics do not occur within these areas, a forthcoming conservation strategy for the threatened Tumbesian avifauna (Best in press) will also include the protection of forest fragments within southwestern Ecuador, including those in the Celica and Tambo Negro regions surveyed during the current survey.

### Abstract

New distributional and ecological data on 31 bird species, gathered during wet and dry season surveys in the Tumbesian region of Ecuador and Peru, are presented. Black-crested Tit-Tyrant *Anairetes nigrocristatus* and Black-eared Hemispingus *Hemispingus melanotis* of the race *piurae* were recorded in Ecuador for the first time; range extensions or new upper altitudinal limits were obtained on a further 15 species. Nine threatened and eight near-threatened species were found; of a total 341 species recorded 45 are restricted range endemics, belonging to three different Endemic Bird Areas. The wet season months of January–March were found to be the breeding season in the Ecuadorian Provinces of Loja and El Oro. Deforestation in the region has been so intense that several species may not be able to persist much longer if current trends continue.

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## APPENDIX A

**Details of the 15 study-sites in southwestern Ecuador and northwestern Peru**

For each site the following information is listed: (i) site number and name (see Figure 1 for map showing locations), (ii) central coordinates, (iii) altitudinal range over which observations were made, (iv) dates of surveys, (v) habitat notes, (vi) area of investigation (if the site comprised more than one distinct area).

\*denotes sites which were ornithologically unknown prior to our surveys

1. *Rio Rirca Valley\**, Azuay Province, ECUADOR; 3°17'S, 79°15'W, 1000–1850 m: 4½ observer days, 15, 22 & 24–25 Feb 1991. Mainly degraded and aridified agricultural land, with some tiny patches of Semi-evergreen Intermontane Cloud Forest and scrub along water courses. Four localities investigated close to the main Machala-Cuenca road: 3°16'S, 79°14'W (1200–1450 m), 2 km E of Calderon; 3°20'S, 79°26'W (1000 m); 3°17'S, 79°21'W, 10 km W of Sta Isabel town (1600 m); 3°20'S, 79°18'W (1750–1850 m), Hacienda Quesada, 7 km S of Sta Isabel.

2. *Uzhcurrumi\**, El Oro Province, ECUADOR; 3°21'S, 79°33'W, 320–1500 m: 6 observer days, 15 & 22 Feb 1991. Mostly degraded agricultural land with very small patches of Moist Lowland Forest. Two localities investigated: area up to 4 km E of Uzhcurrumi village, on north and south side of río Jubones at 3°20'S, 79°34'W (320–500 m); c. 15 km SE of Uzhcurrumi along dirt road to Guanazán at 3°23'S, 79°32'W (1000–1500 m).

3. *Oña*, Azuay Province, ECUADOR; 3°25'S, 79°07'W, 1800–2330 m: 4 observer days, 13–14 Feb 1991. Mainly degraded and aridified agricultural land with some tiny patches of Semi evergreen Intermontane Forest and scrub, mainly along water-courses. Two localities investigated: 3°24'S, 79°07'W (1800–1930 m), 10 km N of Oña; 3°27'S, 79°07'W (2330 m), 4 km S of Oña.

4. *Buenaventura*, El Oro Province, ECUADOR; 3°40'S, 79°44'W, 900–1000 m: 38½ observer days, 24 Feb–4 Mar 1991. Several patches of Very Humid Premontane Cloud Forest with cattle-pastures, c. 9 km W of Piñas town at Buenaventura, along road to Machala. Surveyed in detail in recent years by ANSP (Robbins & Ridgely 1990).

5. *Vicentino\**, Loja Province, ECUADOR; 3°57'S, 79°57'W, 900–1450 m: 9½ observer days, 8 Feb, 14–18 Feb 1991. Patches of Humid Lower Montane Cloud Forest with cattle pastures and crop-land to the E and SW of Vicentino village. The ridge and small section of río Tamine valley along mule-trail to E of Vicentino (to 3°56'S, 79°52'W) and small forested ravines to SW of Vicentino, along dirt road to Alamor town (to 3°57'S, 80°00'W) were surveyed.

6. *Alamor*, Loja Province, ECUADOR; 4°00'S, 80°00'W, 1200–1450 m: 5½ observer days, 13–14 & 18–19 Feb 1991. Patches of Humid Lower Montane Forest NE of Alamor town, along dirt-road to Vicentino village as far as Quebrada Las Vegas at 3°59'S, 79°59'W.

7. *Tierra Colorada\**, Loja Province, ECUADOR; 4°02'S, 79°57'W, 1400–1850 m: 36 observer days, 9–19 Feb 1991. Humid Lower Montane Cloud Forest at a valley head, surrounded by crop-land and cattle-pastures, c. 13 km E of Alamor town. Area of investigation included section from valley head along mule-trail to its meeting point with main Alamor-Celica road 2 km S of Mercadillo.

8. *Catacocha\**, Loja Province, ECUADOR; 4°03'S, 79°40'W, 1400–1750 m: 4½ observer days, 4–5 & 7–8 Mar 1991. A patch of Semi-evergreen Lower Montane Cloud Forest surrounded by crop-land and cattle-pastures c. 6 km NW of Catacocha town, just N of the main road to Macará. Area of investigation included roadside vegetation between Catacocha and forest patch.

9. *Celica*, Loja Province, ECUADOR; 4°07'S, 79°58'W, 1800–2100 m: 5 observer days, 6–8 Feb 1991, 14 & 20 Feb 1991. Humid Montane Cloud Forest patches and cattle-pastures up to 5 km W of Celica town along road to Alamor.

10. *El Empalme*, Loja Province, ECUADOR; 4°07'S, 79°51'W, 800–900 m: 2 observer days, 7 & 17 Feb 1991. Degraded *Ceiba trichistandra*-dominated Deciduous Forest and crop-land along río Catamayo. Two localities investigated: area around the military checkpoint at 4°07'S, 79°50'W and a ravine with some less degraded forest 6 km to the NW at 4°06'S, 79°49'W.

11. *El Ceibo-Sabanilla\**, Loja Province, ECUADOR; 4°15'S, 80°08'W, 350–750 m: 1 observer day, 18 Feb 1991. Below 400 m: degraded acacia woodland; above 400 m: large, but degraded tracts of *Ceiba trichistandra*-dominated Deciduous Forest.

12. *Sozoranga*, Loja Province, ECUADOR; 4°21'S, 79°47'W, 1300–2615 m: 1989, 100 observer days, 8–20 Aug & 8–21 Sept 1991; 19 observer days, 30 Jan–1 Feb, 6 Feb, 5–6 Mar & 9–11 Mar. Patches of Semi-evergreen Lower Montane Cloud Forest (mainly confined to ravines) and roadside crop-land, cattle-pastures and scrub to the NE, ENE and

NW of Sozoranga town along roads out from the town. Most important localities: Panacillo (coordinates as Sozoranga) [1750–1800 m] c. 2 km NE of Sozoranga town, along road to Utuana; Quebrada Yaguana 4°19'S, 79°48'W (1550–1800 m), Quebrada Suquinda 4°18'S, 79°49'W (1550–1800 m) and Quebrada Namballe 4°17'S, 79°49'W (1650–1850 m), 3, 4 and 6 km NW of Sozoranga along dirt-road to Nueva Fatima; and Cerro Florida 4°18'S, 79°47'W, 3 km ENE of Sozoranga, along dirt-road to El Empalme. Area of investigation also included (but only for 5 observer days) ridge (1400–2000 m) and mountain peaks 'Jatumpampa I and II' (2580 m; 2615 m) 1–5 km ESE of Sozoranga, with patches of Humid Montane Cloud Forest, scrub and cattle-pastures.

13. *Utuana\**, Loja Province, ECUADOR; 4°22'S, 79°43'W, 2500 m: 12 observer days 13–14 & 21–25 Sept 1989; 4 observer days 5–6 Feb 1991. Humid Montane Cloud Forest on Loma Llambalanga 1–2 km SW of Utuana village, surrounded by agricultural land.

14. *Tambo Negro\**, Loja Province, ECUADOR; 4°24'S, 79°51'W, 600–1000 m: 70 observer days, 24 Aug–7 Sept & 26–30 Sept 1989; 42½ observer days, 16 Jan–7 Feb & 6–9 Mar 1991. The eastern fringe of an E–W ridge almost entirely covered by *Ceiba trichistandra*-dominated Deciduous Forest extending to at least 1500 ha (the largest patch of remaining forest with an intact understorey in western Loja and El Oro Provinces). Area of investigation centred on Quebrada Hueco Hondo and the adjacent ridge to the W, c. 5 km SW of Sabiango town.

15. *Ayabaca\**, Piura Department, PERU; 4°36'S, 79°44'W, 2625 m: 7 observer days 22–26 Sept 1989. Cloud forest and cattle-pastures at Cerro Chacras, 2 km N of Ayabaca town.

#### APPENDIX B

#### Bird species recorded on two surveys in the Tumbesian region of Ecuador and Peru

This list of all species recorded on the two surveys of southwestern Ecuador (including species found on the 1989 survey at Ayabaca in northwestern Peru) includes the following information:

**Restricted range species (RR):** following the lists of Stattersfield *et al.* (in prep.) and belonging to the following EBAs: A=S. Central Andean forests; C=Chocó/Pacific slope Andes; and T=Tumbesian.

**Altitudinal range (AR):** the altitudinal range over which each species was recorded during our surveys is given to the nearest 25 metres. For those species which were only encountered once, or where the limit of sightings = the limit of effort for species seen many times, the altitude of that record is given in parenthesis.

**Species recorded:** Each site where a species was recorded is indicated by means of a number code corresponding to the sites listed in Appendix A. The sign “\*” is attached to records which refer to the 6–9 March 1991 visit to Tambo Negro.

**Relative abundance:** at five sites where at least six consecutive days were spent (Buenaventura, Tierra Colorada, Sozoranga, Utuana [1989 visit] and Tambo Negro), relative abundances are indicated by the following codes (all observers' records combined): C common, >10 individuals seen or heard daily; FC fairly common, ≤10 individuals recorded daily, U uncommon, recorded on at least every other day; R rare, recorded once or twice only. The letter L is used for sites where a species occurred principally in part of the site (e.g. a river), which was only occasionally visited.

**Breeding data:** the following codes are attached to the site concerned: c Copulation; d Display; f Adult carrying food; i Adult investigating nest-hole; m Adult carrying nest material; y Fledged young; fy Adult feeding young; na Nest with adult; nb Nest-building; nf Nest found, contents not established; ny Nest with young.

**Status** (following species name):\*\*threatened (Endangered, Vulnerable, Rare or Indeterminate) species (Collar *et al.* 1992), \*near-threatened species (Collar *et al.* 1992).

Sequence and nomenclature follow Ridgely & Greenfield (in prep.).

	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>Crypturellus transfasciatus*</i>	T	600–1000	14-FC	14-C
<i>Nothoprocta</i> sp.		1800–2500	12-R	12-R
<i>Phalacrocorax brasilianus</i>		600	14-L	14-L
<i>Ardea cocoi</i>		600	—	14-L

	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>Casmerodius albus</i>		600	14-L	14-L
<i>Butorides striatus</i>		600	—	14-L
<i>Tigrisoma fasciatum*</i>		(1500)	—	7-R
<i>Sarkidiornis melanotis</i>		600–1000	—	14-L
<i>Vultur gryphus</i>		(1850)	—	1
<i>Sarcoramphus papa</i>		450–2000	12-R, 14-R	11, 14-R
<i>Coragyps atratus</i>		(325)–2500	12-C, 13-U, 14-C	2, 4-C, 5, 6, 7-C, 8, 10, 11, 12-C, 14-C
<i>Cathartes aura</i>		(325)–2500	12-C, 13-C, 14-C	1, 2, 4-FC, 5, 7-C, 8, 10, 12-FC, 13, 14-C
<i>Leptodon cayanensis</i>		(1000)	—	4-R
<i>Chondrohierax uncinatus</i>		900–1400	—	4-R, 7-R
<i>Elanoides forficatus</i>		(325)–1900	—	2, 4-FC, 6, 7-U, 9, 14-U
<i>Accipiter ventralis</i>		2400–(2625)	12-R, 13-U, 15	12-R, 13
<i>A. bicolor</i>		(1800)	12-R	—
<i>Leucopternis princeps</i>		900–1450	—	4-U, 7-U
<i>L. occidentalis**</i>	T	(325)–1800	—	2, 4-FC, 5-d,m, 6, 7-FC-d, 9-d
<i>Harpyhaliaetus solitarius</i>		(1800)	12-R	—
<i>Buteogallus urubitinga</i>		600–1800	12-R	4-U-m, 6, 7-U, 14-U-m
<i>B. meridionalis</i>		600–1900	14-FC	4-R, 6, 7-U, 9, 14-R-m, d
<i>Geranoaetus melanoleucus</i>		900–(2625)	12-R, 13-R, 15	1, 4-R-m, 12-R, 13
<i>Parabuteo unicinctus</i>		800–2000	12-FC, 14-FC	4-R, 5, 6, 7-R, 9, 10, 12-U, 14-U
<i>Buteo magnirostris</i>		(325)–(2625)	13-R, 15	2, 4-U-d, 5, 7-R
<i>B. leucorrhous</i>		2500–(2625)	13-R, 15	—
<i>B. polyosoma</i>		600–2000	12-U, 13-U, 14-R	8, 12-R
<i>B. albonotatus</i>		600–(2625)	15	7-R, 14-R
<i>Spizaetus tyrannus</i>		900–1450	—	4-U, 7-U, 10, 12-R
<i>S. ornatus</i>		900–1000	—	4-R
<i>Polyborus plancus</i>		600–1500	14-FC	4-U, 6, 7-R, 12-R, 14-U
<i>Herpetotheres cachinnans</i>		600–800	14-FC	14-U
<i>Micrastur ruficollis</i>		900–1400	—	4-R, 7-R
<i>Falco sparverius</i>		600–2000	12-U, 14-U	4-R, 6, 7-R, 9
<i>F. rufigularis</i>		600	14-U	14-U
<i>Ortalis erythroptera*</i>	T	750–1900	12-R, 14-R	4-U, 5, 6, 7-C-d, 8, 9, 12-FC, 14-R
<i>Penelope barbata**</i>	A	(2625)	15	—
<i>P. purpurascens</i>		1300–1500	—	5, 7-R
<i>P. barbata/purpurascens</i>		(1500)	—	2
<i>Chamaepetes goudotii</i>		900–1000	—	4-U-y
<i>Odontophorus erythrops</i>		900–1600	—	4-U, 7-U
<i>Laterallus albigularis</i>		900–1000	—	4-L
<i>Aramides axillaris</i>		(1400)	—	12-R
<i>Charadrius vociferus</i>		600	14-L	—

continued



	RR	AR	Aug-Sept 1989	Jan-Mar 1991
<i>Tringa melanoleuca/flavipes</i>		600	14-L	—
<i>Actitis macularia</i>		600-1200	14-L	2, 4-L, 5, 6, 14-L
<i>Gallinago</i> sp.		600	—	14-L
<i>Columba fasciata</i>		900-(2625)	12-U, 13-U, 15	4-U, 6, 7-U, 9, 12-U-d
<i>C. subvinacea</i>		900-1600	—	4-R, 7-U
<i>C. plumbea</i>		900	—	4-R
<i>Zenaidura macroura</i>		800-(2625)	12-U, 13-R, 14-R, 15	8, 10
<i>Columbina buckleyi</i>	T	(325)-1200	—	1, 2, 14-R
<i>C. cruziana</i>		(325)-1700	12-C, 14-C	2, 11, 12-FC-c,y, 14-C
<i>Claravis pretiosa</i>		(650)	14 R	—
<i>Leptotila ochraceiventris</i> **	T	650-(2625)	12-U, 14-U, 15	5, 8, 12-U, 14-R*
<i>L. verreauxi</i>		(325)-(2625)	12-U, 13-U, 14-C, 15	1, 2, 5, 7-FC, 8, 10, 12-C, 14-FC
<i>Geotrygon montana</i>		600-1600	12-R	4-R, 14-R
<i>G. frenata</i>		900-(2625)	12-R, 15	4-U, 6, 7-U, 8, 12-R, 13
<i>Aratinga erythrogenys</i> *	T	(325)-2500	12-U, 13-U, 14-C	2, 4-FC, 5, 6, 7-C, 8, 9, 10, 11, 12-FC, 14-C-i
<i>Pyrrhura orcesi</i> **	T	900-1300	—	2, 4-FC-y
<i>Forpus coelestis</i>	T	600-1600	12-FC, 14-C	5, 7-R, 8, 10, 12-U, 14-FC
<i>Brotogeris pyrrhopterus</i> *	T	(325)-1550	12-R, 14-C-c	2, 5, 6, 8, 10, 11, 14-C-c,i
<i>Pionopsitta pulchra</i>	C	(900)	—	4-R
<i>Pionis sordidus</i>		(1500)	—	2
<i>P. chalcopterus</i>		(325)-1450	—	2, 4-C, 5, 6
<i>Coccyzus erythrophthalmus</i>		(325)-1300	—	2, 6, 14-R
<i>C. lansbergi</i>		(650)	—	14-R
<i>Piaya cayana</i>		600-1900	12-R, 14-R	4-U, 5, 6, 7-FC, 9, 14-R
<i>Crotophaga ani</i>		900-1000	—	4-L
<i>C. sulcirostris</i>		600-1800	12-L, 14-L	1, 4-L, 12-L, 14-L
<i>Tapera naevia</i>		(325)-1600	—	1, 2, 5, 7-U, 12-U, 14-R
<i>Tyto alba</i>		(1600)	—	12-R
<i>Otus robcoratus</i>	T	600-1800	—	12-R, 14-R
<i>O. albugularis</i>		2500	13-R	13
<i>Otus</i> sp.		(900)	—	4-R
<i>Pulsatrix perspicillata</i>		(600)	—	14-R
<i>Glaucidium brasilianum</i>		600-1700	14-FC	5, 6, 8, 14-FC-na
<i>Glaucidium</i> sp.		1500-1700	12-U	12-R
<i>Ciccaba</i> sp.		600-1450	—	4-FC, 7-R, 14-R
<i>Asio sytgius</i>		(1400)	—	12-L
<i>Nyctibius griseus</i>		600	14-R	14-R
<i>Nyctidromus albigollis</i>		(325)-1700	12-L, 14-L	2, 4-L, 7-L, 8, 12-L, 14-L
<i>Camprimulgus longirostris</i>		(1400)	—	1
<i>Chordeiles acutipennis</i>		(600)	—	14-R
<i>Streptoprocne zonaris</i>		600-(2625)	12-R, 13-R, 14-R, 15	4-FC, 5, 6, 7-U, 13, 14-U

continued

	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>Cypseloides rutilus</i>		900–(2625)	15	4-U, 5, 6, 7-U
<i>Chaetura brachyura</i>		600	—	14-U
<i>C. cinereiventris</i>		600–1300	14-FC	4-U, 6, 14-FC
<i>Aeronautes montivagus</i>		900–1850	—	1, 4-R
<i>Phaethornis yaruqui</i>		900–1000	—	4-U
<i>P. symmatophorus</i>		1550–1800	12-U	12-U
<i>P. griseogularis/longuemareus</i>		1550–1800	12-U	12-U
<i>Phaethornis</i> sp.		900–1000	—	4-U
<i>Eutoxeres aquila</i>		900–1000	—	4-U
<i>Colibri thalassinus</i>		1700–2615	12-U, 13-U	—
<i>C. coruscans</i>		1700–2615	12-U, 13-U	9
<i>Thalaurania colombica</i>		900–1000	—	4-R
<i>Amazilia amazilia</i>		600–1800	12-FC, 14-FC	12-U, 14-FC
<i>A. tzacatl</i>		900–1450	—	4-U, 5, 6
<i>Adelomyia melanogenys</i>		1400–(2625)	12-U, 13-FC, 15	7-FC, 9, 12-U, 13
<i>Heliodoxa jacula</i>		900–1000	—	4-R-m
<i>Patagona gigas</i>		1800–2350	—	3
<i>Lafresnaya lafresnayi</i>		900–2500	—	13
<i>Coeligena wilsoni</i>	C	900–1450	—	4-R, 5
<i>C. iris</i>	A	1550–(2625)	12-R, 13-U, 15	9, 12-FC, 13
<i>Helianthus strophianus*</i>	C	900–1000	—	4-U
<i>H. viola</i>	A	1900–(2625)	13-U, 15	9, 13
<i>Ocreatus underwoodii</i>		900–1800	—	4-R, 7-R, 12-R
<i>Lesbia muna</i>		2500	12-R	13
<i>Agelaiocercus coelestis</i>	C	900–1500	—	4-FC-nb, 6, 7-FC
<i>Heliothryx barroti</i>		900–1000	—	4-U
<i>Helionaster longirostris</i>		(325)–1400	12-R, 14-U	2, 4-R, 5, 14-FC
<i>Woodstar</i> sp.		900–1800	12-U	1, 4-R, 6, 12-U
<i>Myrtis fanny</i>		1550–1750	—	12-R
<i>Myrmia micrura</i>	T	600–1450	14-U	6, 14-U
<i>Pharomachrus auriceps</i>		900–(2625)	12-R, 15	4-U, 7-U
<i>Trogon melanurus</i>		600–1800	12-U, 14-FC	12-U, 14-FC
<i>T. personatus</i>		900–2000	—	4-U, 7-U, 9
<i>T. collaris</i>		900–1800	—	4-R, 9
<i>Ceryle torquata</i>		600–1000	14-L	4-L, 14-L
<i>Chloroceryle americana</i>		600–1300	14-L	4-L, 12-L, 14-L
<i>Electron platyrhynchum/</i> <i>Baryphthengus martii</i>		900–1000	—	4-U
<i>Momotus momota</i>		600–1800	12-R, 14-U	8, 12-R, 14-FC
<i>Aulacorhynchus haematopygius</i>		900–2000	—	4-U-y, 5, 6, 7-FC-fy, nf, 9
<i>Pteroglossus erythropygius</i>	C	350–1000	—	2, 4-R
<i>Ramphastos swainsonii</i>		900–1000	—	4-U
<i>Picumnus sclateri</i>	T	600–1800	12-FC, 14-U	7-R, 8, 12-U, 14-U
<i>Piculus rivolii</i>		(2500)	—	13
<i>P. rubiginosus</i>		600–1800	12-FC, 14-FC	4-FC, 5, 6, 7-U, 8, 12-R, 14-U
<i>Dryocopus lineatus</i>		650–900	14-U	4-R
<i>Veniliornis fumigatus</i>		900–(2625)	12-R, 13-R, 15	4-U, 5, 7-U, 9, 12-U
<i>V. callonotus</i>		(325)–1800	12-FC, 14-FC	2, 5, 8, 12-U, 14-FC

continued

	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>Campephilus gayaquilensis</i>		600–1450	14-U	5, 6, 7-R, 14-R
<i>Dendrocincla fuliginosa</i>		900–1450	—	4-U, 6, 7-R
<i>Sittasomus griseicapillus</i>		600–1800	12-FC, 14-U	12-R, 14-FC
<i>Glyphorynchus spirurus</i>		900–1000	—	4-FC
<i>Xiphocolaptes promeropirhynchus</i>		650–2500	13-U, 14-U	5, 6, 12-R, 14-R-d
<i>Xiphorhynchus erythropygius</i>		900–1000	—	4-U
<i>Lepidocolaptes souleyetii</i>		(325)–1800	12-FC, 14-FC	2, 4-U, 12-U, 14-FC
<i>L. affinis</i>		1400–(2625)	13-FC, 15	7-FC, 9
<i>Campylorhamphus trochilirostris</i>		650–1700	12-R, 14-R	8
<i>C. pusillus</i>		(1600)	12-R	—
<i>Furnarius leucopus</i>		(325)–1700	12-FC, 14-FC	2, 4-U, 5, 7-R, 8-f, nf, 12-FC, 14-FC
<i>Synallaxis azarae</i>		900–(2625)	12-U, 13-U, 15	1, 4-FC-nf, 5, 6, 7-C, 9, 12-FC, 13
<i>S. brachyura</i>		900–1000	—	4-U
<i>S. tithys**</i>	T	600–1000	14-U	14-FC
<i>Cranioleuca antisensis</i>		900–(2625)	12-FC, 13-C, 15	2, 4-FC, 5, 7-C, 9, 12-FC, 13
<i>Margarornis squamiger</i>		1400–(2625)	15	7-R
<i>Pseudocolaptes johnsoni</i>		900–1000	—	4-U-y
<i>P. boissoneautii</i>		2500	13-U	13
<i>Syndactyla ruficollis**</i>	T	600–(2625)	12-R, 13-FC, 14-U, 15	7-U, 8, 9, 12-FC, 13, 14-U
<i>Anabacerthia variegaticeps</i>		900–1450	—	4-U, 5
<i>Hylocryptus erythrocephalus**</i>	T	600–1800	12-U	8, 10, 12-FC-i,m, 14-FC
<i>Xenops rutilans</i>		650–1800	12-R, 14-R	4-U, 7-U
<i>X. minutus</i>		900–1000	—	4-R
<i>Taraba major</i>		(325)–1700	12-R	2, 5
<i>Sakesphorus bernardi</i>	T	600–1800	12-FC, 14-FC	8, 10, 12-U, 14-FC-nb
<i>Thamnophilus zarumae</i>	T	600–(2625)	12-U, 13-FC, 14-R, 15	5, 7-U, 8, 9, 10, 12-U, 13
<i>T. unicolor</i>		900–1800	—	4-U, 7-U
<i>Thamnistes anabatinus</i>		900–1000	—	4-U
<i>Dysithamnus mentalis</i>		600–1400	14-R	4-U, 7-U
<i>Myrmotherula schisticolor</i>		900–1500	—	4-U, 5, 7-U
<i>Myrmeciza immaculata</i>		900–1800	—	4-R, 7-R
<i>M. griseiceps**</i>	T	1000–(2625)	15	5, 13, 14-R
<i>Formicarius rufpectus</i>		900–1600	—	4-FC, 7-R
<i>Grallaria guatemalensis</i>		900–2500	—	4-FC, 6, 7-FC, 8, 9, 12-FC, 13
<i>G. haplnota</i>		900–1000	—	4-U
<i>G. ruficapilla</i>		1600–(2625)	13-R, 15	1, 7-FC, 8, 9, 12-FC, 13
<i>G. watkinsi</i>	T	600–2000	12-FC, 14-FC	5, 6, 7-U, 8, 10, 12-FC, 14-FC
<i>Melanopareia elegans</i>		600–1800	12-FC, 14-R	4-R, 8, 12-FC, 14-R
<i>Scytalopus unicolor</i>		2000–(2625)	13-R, 15	9, 13
<i>Scytalopus</i> sp.	T	900–1000	—	4-R

continued



	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>Phyllomyias uropygialis</i>		(1600)	12-R	—
<i>Zimmerius chrysops</i>		900–2500	12-FC, 13-FC	4-U, 5, 7-FC-nf, 9, 12-FC
<i>Camptostoma obsoletum</i>		(325)–2500	14-FC	1, 2, 4-FC, 5, 7-FC, 8, 9, 12-FC, 13, 14-FC
<i>Myiopagis subplacens</i>	T	600–1750	12-FC, 14-FC	5, 8, 12-FC, 14-FC
<i>Elaenia albiceps</i>		2000–2500	—	9, 13
<i>Elaenia</i> sp.		(900)	—	4-R
<i>Mecocerculus poecilocercus</i>				
<i>/stictopterus</i>		1500–(2625)	15	2, 7-U, 9, 13
<i>M. calopterus</i>		650–1550	12-R, 14-R	5, 7-U, 14-R
<i>Serpophaga cinerea</i>		1000	—	4-L-m,y
<i>Anairetes parulus</i>		2500	13-R	—
<i>A. nigrocristatus</i>		2500	13-R	13
<i>Euscarthmus meloryphus</i>		600–1800	12-U, 14-U	1, 3, 4-R, 8, 12-U, 14-U
<i>Mionectes striaticollis</i>		900–1700	12-U	—
<i>M. striaticollis</i> / <i>M. olivaceus</i>		900–1700	12-U	4-U
<i>M. oleagineus</i>		(1700)	12-R	—
<i>Phylloscartes</i> sp.		900–1400	—	4-R, 7-R
<i>Lophotriccus pileatus</i>		900–1600	—	4-FC-y, 5, 7-U
<i>Poecilotriccus ruficeps</i>		(2500)	13-R	—
<i>Todirostrum cinereum</i>		900–2000	—	4-R, 5, 8, 9
<i>Tolmomyias sulphurescens</i>		600–1800	12-FC, 14-FC	12-U, 14-FC-nb
<i>Platyrinchus mystaceus</i>		900–1000	—	4-R
<i>Myiotriccus ornatus</i>		900–1000	—	4-FC
<i>Myiobius</i> sp.		900–1200	—	4-R, 5
<i>Myiophobus flavicans</i>		1200–1400	—	6, 7-U-m
<i>M. fasciatus</i>		600–1700	14-R	4-FC-m, 6, 7-FC,fy-nb, 8, 12-U, 14-FC
<i>Contopus cinereus</i>		600–1700	14-FC	8, 12-R, 14-U
<i>C. fumigatus</i>		900–(2625)	12-FC, 15	4-U, 6, 7-FC-nf, 8, 9, 12-U
<i>Lathrotriccus griseipectus</i> **	T	650–1700	—	12-R, 14-U
<i>Sayornis nigricans</i>		(325)–1900	12-FC, 14-L	2, 4-L, 6, 7, 9
<i>Pyrocephalus rubinus</i>		600–1800	12-L, 14-L	1, 6, 10, 14-L
<i>Ochthoeca rufipectoralis</i>		(2500)	13-R	—
<i>O. jelskii</i>		2500–(2625)	12, 15	—
<i>Myiotheretes striaticollis</i>		1400–2500	12-U, 13-U	7-U, 13
<i>Muscigralla brevicauda</i>		800–1500	—	1, 10
<i>Attila torridus</i> **	T	900–1700	—	4-R, 6, 7-U, 9
<i>Myiarchus tuberculifer</i>		900–(2625)	12-FC, 15	1, 4-U, 5, 6, 7-FC, 12-FC
<i>M. phaeocephalus</i>		600–1000	14-FC	14-U-c
<i>Megarhynchus pitangua</i>		(325)–1900	12-U, 14-FC	2, 4-U, 5, 6, 7-FC, 8, 9, 12-U, 14-FC
<i>Myiozetetes cayanensis</i>		(1500)	—	7-R
<i>M. similis</i>		600–2500	12-U, 14-U	4-U, 5, 7-U, 12-U, 13, 14-U

continued

	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>Myiodynastes maculatus</i>		(325)–1900	14-R	2, 4-R, 5, 6, 7-U, 9, 14-U
<i>M. bairdii</i>	T	600–1700	14-U	8, 10, 14-U
<i>M. chryscephalus</i>		(1500)	—	7-R
<i>Legatus leucophaeus</i>		1200–1400	—	6, 7-U-d,m,nb
<i>Tyrannus melancholicus</i>		(325)–1900	12-R, 14-R	1, 2, 4-U, 5, 7-FC, 8, 9, 10, 12-FC, 14-R
<i>T. niveigularis</i>		(350)	—	11
<i>Pachyrhamphus albogriseus</i>		600–2500	14-U	5, 7-U, 13, 14-U
<i>P. homochrous</i>		(325)–1000	14-U	2, 14-FC-nb
<i>Tityra inquisitor</i>		900–1000	—	4-R
<i>Ampelion rubrocristatus</i>		1900–(2625)	13-U, 15	9, 13
<i>Ampelioides tschudii</i> *		900–1500	—	2, 4-R, 7-R
<i>Cephalopterus penduliger</i> *	C	(900)	—	4-R
<i>Masius chrysopterus</i>		900–1300	—	4-R, 5
<i>Machaeropterus deliciosus</i>	C	900–1000	—	4-U-d
<i>Progne chalybea</i>		(325)–2500	—	2, 4-U, 7-R, 9, 12-FC, 13
<i>Notiochelidon cyanoleuca</i>		(325)–2500	13-FC	1, 2, 4-FC, 5, 6, 7-FC, 9, 12-FC, 13
<i>Stelgidopteryx ruficollis</i>		(325)–900	14-R	2, 4-FC
<i>Hirundo rufocollaris</i>		600–2000	12-R	9-nb, 12-L-nb
<i>Cyanocorax mystacalis</i>	T	600–1800	12-FC, 14-FC	5, 12-FC-m, 14-FC
<i>Campylorhynchus fasciatus</i>		(325)–(2625)	12-C, 14-FC, 15	2, 4-R, 5, 6, 7-FC, 8, 12-C-nb, 14-C-nb
<i>Thyrothorus mystacalis</i>		900–1400	—	4-R, 5
<i>T. sclateri</i>		600–1600	12-U, 14-R	12-U, 14-U
<i>T. nigricapillus</i>		900–1000	—	4-U
<i>Troglodytes aedon</i>		(325)–(2625)	12-FC, 13-FC, 14-FC, 15	1, 2, 4-FC, 8, 9, 12-FC, 14-FC-m
<i>T. solstitialis</i>		(1700)	—	7-R
<i>Henicorhina leucophrys</i>		900–1900	—	4-U, 5, 6, 7-FC, 9
<i>Cyphorhinus phaeocephalus</i>		900–1000	—	4-R
<i>Cinclus leucephalus</i>		1000	—	4-L
<i>Poliophtila plumbea</i>		600–1000	14-FC	8, 10, 14-FC
<i>Myadestes ralloides</i>		900–(2625)	15	4-U, 9
<i>Catharus fuscater</i>		1450–(2625)	15	7-FC, 9, 13
<i>C. dryas</i>		(1700)	—	7-R
<i>C. ustulatus</i>		900–1900	—	4-R, 5, 7-U, 12-U
<i>Platycichla leucops</i>		900–1900	—	4-U, 7-U, 9
<i>Turdus chiguanco</i>		1500–1800	—	3, 8-y, 12-U
<i>T. fuscater</i>		1200–(2625)	12-R, 13-FC, 15	1, 7-FC, 8, 9, 12-FC
<i>T. serranus</i>		1450–(2625)	13-R, 15	1, 7-U, 9, 12-U
<i>T. nigriceps</i>		1500–1800	—	8, 12-R
<i>T. reevei</i>	T	600–(2625)	12-FC, 14-FC, 15	8-m, 12-U, 14-FC-na
<i>T. obsoletus</i>		(900)	—	4-R

continued

	RR	AR	Aug–Sept 1989	Jan–Mar 1991
<i>T. maculirostris</i>	T	(325)–1900	12-FC	1, 2, 5, 6, 7-FC-fy,ny, 9, 12-FC, 14-FC
<i>Mimus longicaudatus</i>		600–1500	14-L	8, 14-L
<i>Cyclarhis gujanensis</i>		(325)–(2625)	12-FC, 13-FC, 14-FC, 15	1, 2, 5, 7-FC-m, 9, 12-FC, 13, 14-FC
<i>Vireo olivaceus</i>		(325)–1900	14-FC	2, 5, 6, 9, 14-U
<i>V. leucophrys</i>		600–(2625)	12-FC, 13-FC, 15	1, 4-U, 5, 6, 7-FC, 8, 9, 12-FC-d
<i>Hylophilus decurtatus</i>		900–1400	—	4-U, 5, 6
<i>Parula pitiayumi</i>		(325)–1800	12-FC, 14-FC	2, 4-FC-fy,y, 7-FC, 14-FC
<i>Dendroica fusca</i>		900–1800	—	4-FC, 7-FC, 9
<i>Geothlypis semiflava</i>		900	—	4-U
<i>G. aequinoctialis</i>		900–1500	—	1, 5, 6, 7-FC, 8
<i>Myioborus miniatus</i>		900–(2625)	12-FC, 13-FC, 15	1, 4-FC-nb, 5, 6, 7-FC, 9, 12-FC, 13
<i>Basileuterus nigrocristatus</i>		1900–(2625)	13-U, 15	9, 13
<i>B. trifasciatus</i>	T	900–(2625)	12-FC, 13-FC, 15	4-U, 5, 6, 7-C-nf, 8, 9, 12-FC
<i>B. fraseri</i>	T	(325)–1800	12-FC, 14-FC	2, 5, 8, 12-FC, 14-FC
<i>Coereba flaveola</i>		900–1800	—	4-U, 5, 6, 7-U
<i>Euphonia cyanocephala</i>		900–(2625)	12-R, 15	4-R, 7-U, 12-U
<i>E. xanthogaster</i>		900–1800	—	4-FC-y, 5-fy,y, 7-FC
<i>E. lanirostris</i>		(325)–(2625)	12-FC, 14-FC, 15	2, 4-U, 5, 6, 7-FC, 8, 9, 12-FC, 14-FC-nb
<i>Conirostrum sitticolor</i>		2500–(2625)	13-R, 15	13
<i>Diglossa cyanea</i>		2500–(2625)	13-C, 15	13
<i>D. humeralis</i>		2500–(2625)	13-U, 15	13
<i>D. albilatera</i>		2500–(2625)	13-U, 15	—
<i>D. sittoides</i>		1500–1800	12-U	—
<i>Cyanerpes</i> sp.		(900)	—	4-U
<i>Chlorophanes spiza</i>		900	—	4-U
<i>Pipraeidea melanonota</i>		900–1800	—	1, 4-U, 5, 6, 7-U-m
<i>Tangara rufigula</i>		900–1000	—	4-FC
<i>T. arthus</i>		900–1900	—	4-FC, 5, 6, 7-FC, 9
<i>T. icterocephala</i>		900–1300	—	4-U, 6
<i>T. parzudakii</i>		900	—	4-U
<i>T. cyanicollis</i>		(900)	—	4-R
<i>T. rufivertex</i>		900–1850	—	4-U-fy,y, 6, 7-R
<i>T. gyrola</i>		900–1400	—	4-FC, 5, 6
<i>T. nigroviridis</i>		900–1900	—	4-FC, 7-FC-m,nb, 9, 12-U
<i>T. vassorii</i>		1850–(2625)	13-FC, 15	12-R
<i>T. viridicollis</i>		1200–(2625)	12-U, 13-U, 15	6, 7-FC, 9, 12-U
<i>Amisognathus flavinucha</i>		1200–1900	—	6, 7-U-m, 9
<i>A. notabilis</i>	C	900–1000	—	4-U

continued



	RR	AR	Aug-Sept 1989	Jan-Mar 1991
<i>Tersina viridis</i>		(1000)	—	4-R
<i>Thraupis episcopus</i>		(325)-1900	12-FC, 14-FC	1, 2, 4-FC, 5, 6, 7-FC, 8, 9, 12-FC, 14-FC
<i>T. palmarum</i>		(325)-1600	—	2, 4-FC, 5, 6, 7-U
<i>T. cyanocephala</i>		1700-(2625)	12-FC, 15	7-R, 9
<i>Ramphocelus flammeigerus</i>		(325)-1900	—	2, 4-FC-y, 5, 6, 7-FC, 9
<i>Piranga flava</i>		600-(2625)	12-FC, 14-FC, 15	4-R, 5, 6, 7-FC-nf, 9, 12-FC, 13, 14-FC
<i>P. rubra</i>		1450-1900	—	7-U, 9, 12-R
<i>P. leucoptera</i>		900-1600	—	4-R, 7-R
<i>Chlorothraupis stolzmanni</i>		900-1000	—	4-U
<i>Thylpopsis ornata</i>		1900-(2625)	13-U, 15	9, 13
<i>Chlorospingus ophthalmicus</i>		900-1450	—	4-FC, 5
<i>C. canigularis</i>		900-1200	—	4-U, 6
<i>C. flavigularis</i>		900-1000	—	4-U
<i>C. semifuscus</i>	C	900	—	4-U
<i>Hemispingus melanotis</i>		2500	13-FC	—
<i>Conothraupis speculigera</i>		(325)-1800	—	2, 5, 8, 12-R, 14-FC*
<i>Catamblyrhynchus diadema</i>		1700-2500	13-U	7-R, 13
<i>Saltator maximus</i>		(325)-1800	—	2, 4-FC, 5, 6, 7-FC-f
<i>S. atripennis</i>		900-1600	—	4-U, 7-U
<i>S. nigriceps</i>	T	1600-2500	12-U, 13-U	8, 12-U, 13
<i>S. albicollis</i>		600-1400	14-FC	5, 8, 7-U, 12-U, 14-FC
<i>Pitylus grossus</i>		900	—	4-U
<i>Pheucticus chrysogaster</i>		(325)-(2625)	12-FC, 14-U, 15	1, 2, 7-FC, 8, 9, 10, 12-FC, 14-FC
<i>Volatinia jacarina</i>		(325)-1800	12-FC	1, 2, 4-L, 5, 12-L, 14-L
<i>Sporophila americana</i>		(325)-1400	14-U	2, 4-L, 5, 6, 14-L
<i>S. luctuosa</i>		600-1200	—	4-L, 5, 14-L
<i>S. nigricollis</i>		900	—	4-L
<i>S. peruviana</i>		1000-1500	—	1, 2
<i>S. simplex</i>		(1500)	—	1
<i>Oryzoborus angolensis</i>		(900)	—	4-R-fy
<i>Catamenia analis</i>		1800-2350	—	3
<i>Sicalis flaveola</i>		600-1800	12-L, 14-L	2, 6, 7-L, 8, 10, 12-L, 14-L
<i>Phrygilus plebejus</i>		800-1800	12-FC	8, 10, 12-L
<i>P. alaudinus</i>		(1000)	—	1
<i>Atlappetes rufinucha</i>		1300-(2625)	15	5, 6, 7-FC-m, 9
<i>A. tricolor</i>		900-1000	—	4-U
<i>A. leucopterus</i>		1200-1800	12-FC	5, 7-FC, 8, 12-FC, 14-FC
<i>A. seebohmi</i>	T	1500-2500	12-FC	9, 12-U, 13
<i>A. albiceps</i>	T	800-1000	—	10, 14-U
<i>A. torquatus</i>		900-(2625)	12-FC, 13-U, 15	4-U, 5, 6, 7-FC, 8, 9, 12-U, 13

continued

	RR	AR	Aug-Sept 1989	Jan-Mar 1991
<i>Arremon aurantirostris</i>		900-1000	—	4-U
<i>A. abeillei</i>		600-1800	12-FC, 14-FC	8, 12-U, 14-FC
<i>Arremonops conirostris</i>		900-1250	—	4-U, 5
<i>Aimophila stolzmanni</i>	T	800	—	10
<i>Zonotrichia capensis</i>		(325)-(2625)	12-L, 13-L, 15	1, 2, 3, 4-L, 7-L-nb, 8, 9, 12-L, 13
<i>Molothrus bonariensis</i>		600-1600	14-L	1, 7-L, 8, 10, 12-L, 14-L-nf
<i>Psarocolius angustifrons</i>		(2600)	12-R	—
<i>Cacicus cela</i>		650	14-U	14-U
<i>C. microrhynchus</i>		(325)-900	—	2, 4-U-nf
<i>Amblycercus holosericeus</i>		(1700)	12-R	—
<i>Dives warszewiczi</i>		600-1800	12-L, 14-L	4-L, 5, 7-L, 8, 9, 10, 12-L, 14-L
<i>Icterus graceannae</i>	T	600-1700	12-FC, 14-FC	14-U
<i>I. mesomelas</i>		600-1750	12-U	2, 4-R, 5, 7-U, 12-U
<i>Sturnella bellicosa</i>		(325)-1025	14-L	1, 3, 14-L
<i>Carduelis magellanica</i>		900-(2625)	12-L, 15	1, 4-L, 6, 7-L, 8, 9, 12-L
<i>C. xanthogastra</i>		900	—	4-R

On the validity of *Ceyx (Myioceyx) lecontei ruficeps*

by Robert W. Dickerman

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Peters (1945) recognized two subspecies of the tiny forest-dwelling, insect-eating Red-headed Dwarf Kingfisher *Ceyx (Ispidina* or *Myioceyx*) *lecontei*: nominate *lecontei* (type locality Moonda (=Mondah) River, Gaboon), and *ugandae* (type locality Budongo, Uganda). More recent authors (Mackworth-Praed & Grant 1970, Colston & Curry-Lindahl 1986, Fry *et al.* 1988, 1992) have not recognized geographic variation within the species. In attempting to identify a series of recently taken specimens from Liberia, it was necessary to reevaluate the available names for the species. These also include *Ispidina ruficeps* Hartlaub (type locality Akuapim, Ghana).

First it must be noted that the species is not well represented from West Africa in the ornithological collections of the world. Sharpe (1892) had but a single specimen (from Ghana), and the species was not reported from Liberia until 1986 when Colston & Curry-Lindahl reported on two specimens. Teams from the American Museum of Natural History have subsequently collected 14 specimens in Liberia (7 skins, 5 skeletons and 2 in liquid). The species is apparently locally common along small watercourses in undisturbed forested areas.